CLAIMS

1. A method of manufacturing a power transmission belt comprising a body with a length and a cushion rubber layer in which at least one load carrying member is embedded so as to extend lengthwise of the body, said method comprising the steps of:

extrusion molding (a) a first rubber composition comprising rubber with short fibers therein and (b) a second rubber composition that is different than the first rubber composition to produce a first sheet in which the second rubber composition defines at least a part of the cushion rubber layer;

applying the at least one load carrying member to the second rubber composition to produce a preform assembly; and

processing the preform assembly to produce a power transmission belt.

2. The method of manufacturing a power transmission belt according to claim 1 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises extrusion molding a second rubber composition that has no short fibers therein.

3. The method of manufacturing a power transmission belt according to claim 2 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises extrusion molding a first rubber composition and a second rubber composition in a cylindrically-shaped mold with an inside peripheral surface and an outside peripheral surface between which a flow passage having a diameter is defined with an expansion portion with an inlet and a discharge port and in which the flow passage increases in diameter from the inlet towards the discharge port and so that the first rubber composition is at the inside peripheral surface and the second rubber composition is at the outside peripheral surface.

4. The method of manufacturing a power transmission belt according to claim 3 wherein the step of applying the at least one load carrying member comprises wrapping the at least one load carrying member and the first sheet around a molding drum and against each other.

5. The method of manufacturing a power transmission belt according to claim 1 wherein the step of processing the preform assembly comprises grinding the body to define ribs extending lengthwise of the body.

6. The method of manufacturing a power transmission belt according to claim 1 wherein the step of processing the preform assembly comprises applying at least one additional layer to the preform assembly.

7. The method of manufacturing a power transmission belt according to claim 6 wherein the step of applying at least one additional layer comprises applying a fabric layer to the preform assembly.

8. The method of manufacturing a power transmission belt according to claim 6 wherein the step of applying at least one additional layer comprises applying a rubber layer to the preform assembly.

9. The method of manufacturing a power transmission belt according to claim 1 further comprising the steps of manufacturing a second sheet in substantially the same manner as the first sheet is manufactured and joining the first and second sheets to each other to produce a composite preform assembly.

10. The method of manufacturing a power transmission belt according to claim 9 wherein the step of processing the preform assembly comprises processing the composite preform assembly by forming ribs in the body.

11. The method of manufacturing a power transmission belt according to claim 10 wherein the step of forming ribs in the body comprises forming ribs in each of the first and second sheets.

12. The method of manufacturing a power transmission belt according to claim 5 wherein the step of grinding the body comprises grinding the first rubber composition.

13. The method of manufacturing a power transmission belt according to claim 1 wherein the step of applying the at least one load carrying member comprises applying the at least one load carrying member directly to the second rubber composition.

14. The method of manufacturing a power transmission belt according to claim 1 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises extruding the first rubber composition into a cylindrical shape with a peripheral inner surface and a peripheral outer surface and thereafter extruding the second rubber composition to cover the peripheral outer surface of the cylindrical shape defined by the first rubber composition to produce a composite cylindrical shape.

15. The method of manufacturing a power transmission belt according to claim 14 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises causing the composite cylindrical shape to be extruded through a flow passage in a cylindrically-shaped mold in an expansion portion of the flow passage having an inlet and a discharge port downstream of the inlet and wherein the flow passage is defined between an inside peripheral surface and an outside peripheral surface on the cylindrically-shaped mold and configured so that the diameter of the flow passage increases from the inlet towards the discharge port.

16. The method of manufacturing a power transmission belt according to claim 15 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises simultaneously and continuously extruding the first and second rubber compositions through the flow passage.

17. The method of manufacturing a power transmission belt according to claim 16 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises introducing the first rubber composition into the flow passage at a first location and introducing the second rubber composition into the flow passage downstream from the first location at a second location.

18. The method of manufacturing a power transmission belt according to claim 17 wherein the flow passage has a radial thickness and the step of extrusion molding a first rubber composition and a second rubber composition comprises causing the first rubber composition to have a controlled first thickness between the first location and the second location and causing the thickness of the combined first composition and second composition in the flow passage to have a controlled second thickness that is greater than the first thickness between the second location and the discharge port.

19. The method of manufacturing a power transmission belt according to claim 17 wherein the step of introducing the first rubber composition comprises introducing the first rubber composition at the first location at the inlet to the expansion portion of the flow passage.

20. The method of manufacturing a power transmission belt according to claim 17 wherein the step of introducing the second rubber composition comprises introducing the second rubber composition at the second location downstream of the inlet for the expansion portion of the flow passage.

21. The method of manufacturing a power transmission belt according to claim 20 wherein the step of introducing the second rubber composition comprises introducing the second rubber composition at the second location adjacent to the discharge port.

22. The method of manufacturing a power transmission belt according to claim 3 further comprising the step of kneading the first rubber

composition before the first rubber composition is introduced to the inlet of the expansion portion of the flow passage.

23. The method of manufacturing a power transmission belt according to claim 22 wherein the step of kneading the first rubber composition comprises kneading the first rubber composition using an extrusion screw.

24. The method of manufacturing a power transmission belt according to claim 23 further comprising the step of passing the first rubber composition through a gear pump.

25. The method of manufacturing a power transmission belt according to claim 24 wherein the step of passing the first rubber composition through a gear pump comprises passing the first rubber composition through a gear pump between the extrusion screw and the inlet of the expansion portion of the flow passage.

26. The method of manufacturing a power transmission belt according to claim 1 wherein the step of processing the preform assembly comprises processing the preform assembly to produce one of a V-belt, a V-ribbed belt, and a double V-ribbed belt.

27. A method of manufacturing a rubber sheet to define at least a part of a compression rubber layer and cushion rubber layer in a power transmission belt, said method comprising the steps of:

extrusion molding (a) a first rubber composition comprising rubber with short fibers therein and (b) a second rubber composition that is different than the first rubber composition to produce a sheet;

said step of extrusion molding comprising (c) extrusion molding the first and second rubber compositions in a cylindrically-shaped mold with an inside peripheral surface and an outside peripheral surface between which a flow passage having a diameter is defined with an expansion portion with an inlet and a discharge port and in which the flow passage increases in diameter from the inlet towards the outlet so that the first and second rubber compositions are combined and the first rubber composition is at the inside peripheral surface and the second rubber composition is at

the outside peripheral surface, and (d) cutting the combined extruded first and second rubber compositions discharged at the discharge port to configure the first and second combined rubber composition discharged at the discharge port into a sheet form.

28. The method of manufacturing a rubber sheet for a power transmission belt according to claim 27 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises extrusion molding a second rubber composition that has no short fibers therein.

29. The method of manufacturing a rubber sheet for a power transmission belt according to claim 27 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises extruding the first rubber composition into a cylindrical shape with a peripheral inner surface and a peripheral outer surface and thereafter extruding the second rubber composition to cover the peripheral outer surface of the cylindrical shape defined by the first rubber composition to produce a composite cylindrical shape.

30. The method of manufacturing a rubber sheet for a power transmission belt according to claim 29 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises simultaneously and continuously extruding the first and second rubber compositions through the flow passage.

31. The method of manufacturing a rubber sheet for a power transmission belt according to claim 30 wherein the step of extrusion molding a first rubber composition and a second rubber composition comprises introducing the first rubber composition into the flow passage at a first location and introducing the second rubber composition into the flow passage downstream from the first location at a second location.

32. The method of manufacturing a rubber sheet for a power transmission belt according to claim 31 wherein the flow passage has a radial thickness and the step of extrusion molding a first rubber composition and a second rubber composition comprises causing the first rubber composition to have a controlled first thickness between the first location and the second location and causing the thickness of the combined first composition and second composition in the flow passage to have a controlled second thickness that is greater than the first thickness between the second location and the discharge port.

33. The method of manufacturing a rubber sheet for a power transmission belt according to claim 31 wherein the step of introducing the first rubber composition comprises introducing the first rubber composition at the first location at the inlet to the expansion portion of the flow passage.

34. The method of manufacturing a rubber sheet for a power transmission belt according to claim 31 wherein the step of introducing the second rubber composition comprises introducing the second rubber

composition at the second location downstream of the inlet for the expansion portion of the flow passage.

35. The method of manufacturing a rubber sheet for a power transmission belt according to claim 34 wherein the step of introducing the second rubber composition comprises introducing the second rubber composition at the second location adjacent to the discharge port.

36. The method of manufacturing a rubber sheet for a power transmission belt according to claim 27 further comprising the step of kneading the first rubber composition before the first rubber composition is introduced to the inlet of the expansion portion of the flow passage.

37. The method of manufacturing a rubber sheet for a power transmission belt according to claim 36 wherein the step of kneading the first rubber composition comprises kneading the first rubber composition using an extrusion screw.

38. The method of manufacturing a rubber sheet for a power transmission belt according to claim 37 further comprising the step of passing the first rubber composition through a gear pump.

39. The method of manufacturing a rubber sheet for a power transmission belt according to claim 38 wherein the step of passing the first rubber composition through a gear pump comprises passing the first rubber composition through a gear pump between the extrusion screw and the inlet of the expansion portion of the flow passage.